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ABSTRACT

This study sought to determine the effect of developmental preschool on school readiness and kindergarten achievement for at-risk children. The study involved 40 preschool-age and 40 kindergarten-age children. These children were divided into two experimental groups and two control groups for the purpose of comparing standardized test scores. The experimental groups had attended or were attending 1 year of developmental preschool; the control groups had not. The Slosson Kindergarten Readiness Test was administered to the experimental and control groups of preschool-age children for comparison, and the Metropolitan Assessment package was administered to the experimental and control groups of kindergarten-age children for comparison. The results indicated a significant difference in kindergarten readiness for the children who attended preschool. In addition, results indicated a significant difference in kindergarten achievement for children who had attended preschool the previous year. This indicates developmental preschool serves as an early intervention strategy resulting in improved school readiness skills and kindergarten achievement. (Author/LPP)

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ED 425 821

A STUDY TO DETERMINE THE EFFECTIVENESS OF PRESCHOOL ON KINDERGARTEN READINESS AND ACHIEVEMENT

A Thesis

Presented to

The Faculty of the Master of Arts Degree Program

Salem-Teikyo University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Education

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ABSTRACT

The intent of this study is to determine the effect of developmental preschool on school readiness and kindergarten achievement for at-risk children. The study involved forty (40) preschool aged and forty (40) kindergarten aged children. These students were divided into two experimental groups and two control groups for the purpose of comparing standardized test scores. The experimental groups attended one year of developmental preschool and the control groups did not.

The Slosson Kindergarten Readiness Test was administered to the experimental and control groups of preschool aged children for comparison. The Metropolitan Assessment Package was administered to the experimental and control groups of kindergarten aged children for comparison.

The results indicated a significant difference in kindergarten readiness for the children who attended preschool. In addition, results indicated a significant difference in kindergarten achievement for children who had attended preschool the previous year. This indicates developmental preschool serves as an early intervention strategy resulting in improved school readiness skills and kindergarten achievement.

Chapter One

INTRODUCTION

Our nation is engaged in an educational reform movement that is attempting to address the issues of rapidly changing social, economic, and technological climates. Many of these issues have a direct impact on the educational goals of early learners. In 1990, then President Bush sponsored a summit of governors and policy makers that outlined and adopted the National Education Goals. This document stated that by the year 2000 all children in the United States would enter school ready to learn. Preschools in America have been working to address the issues of early intervention as they relate to school readiness. Though preschool enrollment doubled between 1973 and 1994, low-income families continued to fall short of the national averages on attendance (Gronlund, 1993). In October 1994 President Clinton signed into law the Improving America's Schools Act. This act expanded on the ways that Title I federal monies could be spent on early intervention techniques and instruction of readiness skills in public school districts (LeTendre, 1996).

These Title I monies can currently be used in a flexible manner to help individual districts meet state standards on at-risk intervention and

school readiness. Principals can work with teachers to determine the most effective use of Title I funds within their specific school district. In addition, Title I bases the distribution of federal dollars on the number of low-income children within a school population rather than that school's academic achievement scores. This prevents schools from being punished monetarily for improving the learning environment. These new guidelines place an emphasis on providing low-income and disadvantaged students with the opportunity to meet the same academic challenges of all children (LeTendre. 1996).

Many school districts, including Mercer County, West Virginia, have opted for district-wide, developmentally appropriate preschool programs that target four-year-old children qualifying for Title I services. This opens the door for many students previously unable to attend early childhood programs addressing school readiness and intervention objectives. The connection between low-income and poor academic achievement has been previously documented (Campbell & Ramsey, 1994) and teachers, administrators, parents, and communities see this opportunity as a workable solution for children needing enhanced cognitive and social development.

When teachers and administrators are grounded in an early childhood knowledge base, students' needs are appropriately interpreted and addressed,

making effective intervention possible. Using a child-based philosophy, teachers acknowledge the uniqueness and diverse learning styles of students while planning a program that is both flexible and challenging (Glascott, 1994). Including families and their communities in the planning and implementation process reinforces the importance of the total early childhood intervention program.

Students coming from a literature rich developmental preschool program have a greater degree of readiness for the challenges of the elementary school curriculum (Campbell & Ramsey, 1994). In the developmentally appropriate classroom, creative play is the foundation for language and literacy development (Neuman & Roskos, 1990). Dramatic role-play, read-alouds, use of authentic props, and opportunities for language interactions allow children to develop social and cognitive skills in a risk-free environment. Literacy and language that are used in a purposeful manner become a part of the play in child-centered, experience-based classrooms. Encouraging parents to participate in these activities can create additional support for emerging literacy and school readiness.

One specific Title I preschool program within Mercer County, West Virginia is located at Montcalm Elementary School. This program services forty preschool aged children determined to be at-risk due to socioeconomic

factors. Curriculum focuses on kindergarten readiness skills within the confines of developmentally appropriate practices. Program strategies include involvement of families, community leaders, and school administrators in the implementation of the literacy based program. Children participate in activities directed towards cognitive stimulation, critical thinking, language, literacy, and social development. Choice and decision-making opportunities occur throughout the school day. Children's literature provides the knowledge base from which classroom activities evolve. Students are given opportunities to explore, experiment, and discover through the use of learning centers and stations.

Kindergarten teachers report observable and measurable differences in students coming from this preschool program when compared with those students entering kindergarten not having had the same opportunity. The issue must then be addressed, does the four-year old preschool curriculum offered at Montcalm Elementary School positively intervene in the early learner's cognitive development and send these children into the public school classroom ready to learn?

Statement of the Problem

Will the preschool program have an effect on readiness skills and academic achievement when students enter the kindergarten level?

Hypothesis

H_o: No significant differences will be identified when comparing children who attended preschool to children who did not attend preschool.

H_1: Children who attended preschool will score higher in kindergarten readiness and achievement than children who did not attend preschool.

The Purpose of the Study

The purpose of the study is to determine if the students participating in the preschool program enter kindergarten with enhanced readiness skills that result in improved academic achievement.

Significance of the Study

Students from low income-families are often unable to participate in programs that stimulate cognitive development and enter school with limited readiness skills that result in low achievement. This study is to determine if the preschool program is an effective intervention technique that results in (1) the student beginning kindergarten ready to learn and (2) the student

performing kindergarten tasks with increased achievement. By stimulating cognitive development through the preschool experience, children will enter into the regular elementary curriculum with appropriate readiness skills.

Assumptions

The assumption is that the students participating in this study are typical four, five, and six-year old children and the instruments used are reliable and valid.

Limitations

The study involved 20 four and five-year old students enrolled in the Title I developmental preschool program during the 1997-98 school year and 20 four and five-year old students that have not participated in the Title I preschool program. In addition, the study involved 40 kindergarten children between the ages of five and six years with 20 students having prior Title I preschool experience. All children were enrolled at Montcalm Elementary School located in Rock, West Virginia.

Definition of Terms

At-risk student – a student who is a potential low-achiever within the school environment because of limited socioeconomic factors and reduced cognitive development (Elkind, 1996).

Developmentally appropriate curriculum – teaching strategies based on how young children learn (Bredekamp, 1993).

Early intervention – techniques that address cognitive development and low achievement before school failure occurs (Campbell, Ramey, 1994).

Experience based learning – discovery learning techniques that give the young student an opportunity to explore and experiment within the classroom environment (Bredekamp, 1993).

School readiness – attitudes and skills that provide a foundation from which future learning occurs (Maxwell & Eller, 1994).

Chapter Two

REVIEW OF THE RELATED LITERATURE

Introduction

According to the West Virginia Survey Research Center, publisher of the 1997 Kids Count Data Book, 33% percent of West Virginia's children are living at or below the poverty level (Hale, 1997). Schools servicing a high percentage of students from low-income families are found to consistently score lower on standardized achievement tests. Additionally, the dropout rate for disadvantaged students is five times higher than those from stable economic backgrounds. "We have effective schools in low-income communities in West Virginia, but regrettably, far too many schools serving low-income children are not effective," said Margie Hale, Executive Director of the Kids Count Fund (Hale, 1997, p.1). Her organization reports that 50% of low-income preschool aged children have no access to school programs that prepare children to learn and encourage early family participation in the educational process (Hale,1997). The West Virginia Governor's Cabinet on Children and Families has a mission statement that includes emphasis on quality early childhood programs that lead to greater success in school and adult life (Pratt, 1997). With the national and state focus on early intervention and school readiness, school districts and

communities are working to implement programs that meet the needs of low-income families with preschool aged children.

An Historical Overview

Historical evidence indicates preschool education is not a unique concept in the United States. Since the 1930's, the federal government has sponsored programs that have met the criteria for public school education and included four-year old students. These programs included WPA nurseries, day schools during World War II and most recently, Head Start (Bloch, 1987).

During the 18th and 19th centuries, four-year old children were routinely included wherever public schools existed. During most of this time, curriculum focused on emergent reading skills, character development, and socially acceptable behavior. During the late 19th century, charitable kindergartens developed in response to the growing population of urban poor. The perception was that early childhood programs might derail the cycle of poverty and crime already associated with low-income areas within the cities. The belief that early childhood programs could be used as a tool for social reform and control extended into the early 20th century. Philanthropic organizations sponsoring charitable kindergartens pushed for public programs to enlarge the number of students that could be served.

Several experimental public funded kindergartens were tried in city schools systems in several states. Eventually, kindergartens expanded with important modifications and variations. Some states offered half-day classes for children between the ages of four and six while others addressed the developmental needs of multi-aged students in full day programs. By the late 1920's, progressive theories in early childhood development resulted in a curriculum that focused on physical and emotional development through group interaction and play (Bloch, 1987).

The widespread eviction of four-year old children from public school kindergartens occurred over time. The economic cuts taken by public school districts during the depression led to federally funded WPA nursery schools. This relieved many local school systems from the burden of educating its youngest students. Women working in war related industries during World War II required a day school system for preschool aged children. State funded kindergartens servicing multi-aged children began to flourish. However, the baby boom following World War II not only revived the ideological emphasis of maternal love and influence on very young children, but also increased the number of students enrolling into public school classrooms. Priority placement was given to five-year old students, thereby denying younger children entrance into public funded kindergarten programs

(Bloch, 1987). Private preschools remained available to children from affluent families; however, there were no public funded programs for children living in low-income families.

By the early 1960's, federal policymakers and public school educators recognized the need for early childhood intervention in the lives of disadvantaged children and their families (Blank & Reisman, 1990). The result was the development of the Head Start program in 1965. Head Start currently succeeds by offering multi-faceted social services and early intervention techniques that include preschool education for children in low-income families. Unfortunately, only 20% of eligible children are currently enrolled in a Head Start preschool and local school districts are feeling the pressure to provide alternative programs for disadvantaged early learners (Blank & Reisman).

Early Intervention and School Readiness

A longitudinal study conducted by the Cincinnati public school district offers evidence that quality preschool programs provide a positive impact on long-term educational goals (Nieman & Gastright, 1981). Of 551 children studied, 410 were enrolled in full day kindergarten and had attended a four-year old preschool program. The control group of 141 students had

no prior preschool experience and attended half-day kindergarten sessions. Tests consisted of a locally designed Kindergarten Goal Card, the Boehm Test of Basic Skills, and the Metropolitan Readiness Test (sub-tests 1,3,4, and 5). Results of the Kindergarten Goal Card were not statistically significant. However, tests administered following three months of kindergarten indicated extreme differences between group scores on the Metropolitan Readiness Tests. Children with preschool experience enrolled in full day kindergarten resulted in a mean raw score of 42 as compared to 23 for those in half-day kindergarten and no preschool experience. Additionally, results of the Boehm Test of Basic Concepts indicated statistically significant differences favoring students with a preschool background. Testing was performed again while students were in the fourth grade and the indications evidenced in test results for the group enrolled in full day kindergarten with preschool experience was repeated (Nieman & Gastright, 1981).

Lawrence Schweinhart and David Weikart have estimated the dollar savings for society when high-quality preschools are used as an early intervention technique (Nieman & Gastright, 1981). In a report for the Ford Foundation, David P. Weikart, president of High Scopes Educational Research Foundation, notes, "Preschool not only prevents problems that, if

unattended, cost society much more later on but increases the effectiveness and efficiency of the investment we already make in schooling," (Weikart, 1990, p. 49).

Frances A. Campbell of the Frank Porter Graham Child Development Center, University of North Carolina, Chapel Hill and Craig T. Ramey of Civitan International Research Center, University of Alabama, performed an experimental study of early childhood intervention for children living in poverty. They noted that positive effects of preschool education on academic achievement were maintained through age twelve. Follow-up data, obtained four to seven years after the early childhood intervention ended, confirmed the significance of preschool programs for economically disadvantaged children. Fifty-five percent of children in the control group were retained in at least one grade as compared to thirty percent in the experimental group. Significant differences were also measured in standardized math and reading scores as the groups advanced through school. The conclusion made by Campbell and Ramey (1996), and published in the Child Development Journal, indicated the importance of policy directed towards early educational intervention:

> "If we are to provide truly fair opportunities for children born into poverty, we must see to it that adequate resources exist to enable their families to support them and enhance their cognitive growth. Better early environments can improve

> the chances that poor children will acquire the preparation they need for academic success," (Campbell & Ramey, 1996, p. 696).

The findings of Campbell and Ramey indicate the value of intervention techniques that strengthen the cognitive development in the preschool aged child living in poverty. Children provided with a developmentally appropriate early childhood education, enter school with a greater degree of readiness and an increased chance of academic success (Campbell & Ramey, 1996).

Developmentally Appropriate Preschool Curriculum

"The positive effects of preschool programs, apply only to high-quality child development programs," reports David Weikart in an interview for The Futurist Magazine (Weikart, 1990, p. 49). These programs can improve the lives of children living in low-income families and retard the social problems associated with poverty. The emphasis, however, must remain on the developmental soundness of the preschool program (Weikart, 1990). Many child development professionals express concern that early childhood programs focusing on basic skills in a teacher-controlled environment may have harmful effects on young students (Stipek, et al. 1995). In a research study conducted by the Graduate School of Education, UCLA, Los Angeles, statistical evidence indicated positive effects on

children attending child-centered programs. The sample population used in the study, reflected cultural and gender diversity, with forty-two percent of the children living at or below the poverty level. Eight child-centered preschools were then compared with ten didactic preschools in six areas of measurement. Using the Hyson measure and the Early Childhood Environment Rating Scale (ECERS), the child-centered programs that followed the guidelines of the National Association for the Education of Young Children scored significantly higher that the didactic classrooms for program quality. Additionally, children in child-centered programs perceived their abilities significantly higher than did children in didactic environments. When tested on a choice of academic related tasks, children from child-centered preschools were more likely to select work in numbers or letters than children in didactic programs (Stipek, et al. 1995).

The position statement for the National Association for the Education of Young Children reflects the importance of developmentally appropriate practices in preschool education (Bredekamp, 1993):

> "The National Association for the Education of Young Children (NAEYC) believes that a high quality early childhood program provides a safe and nurturing environment that promotes the physical, social, emotional, and cognitive development of young children while responding to the needs of families," (p. 1).

Developmental appropriateness involves two areas for consideration: age appropriateness and individual appropriateness. A knowledge base in human development is essential for the planning of age appropriate activities that stimulate physical, social, emotional, and cognitive growth. Individual appropriateness recognizes the child as a unique person with diverse interests and experiences. Teachers combine early childhood development practices with the recognition of individuality for the implementation of an appropriate learning environment (Bredekamp, 1993).

Curriculum planning also acknowledges the ages of the children with attention on individual and diverse levels of experience. Learning does not occur in subject isolation but rather in an integrated approach. Activities involve all areas of the developmental domains. Teachers support the interests and backgrounds of the students in the development of the curriculum plan by observing each child's unique perspective throughout the daily routine (Tegano, 1991). Play is the primary method for allowing preschool aged children to progress through the developmental sequence (Bredekamp, 1993). Active exploration and social interaction that is child-initiated and supported by the teacher is essential in developmentally appropriate environments. The conclusions drawn by Piaget, Montessori, and Erikson have determined that the learning process results from

interaction between the children's experiences within the environment and their individual cognitive complexity (Lavatelle, 1970). As the child matures, new skills and experiences are acquired and the learning process advances. To the early childhood educator, this calls for a curriculum plan that provides an experience-based framework. If children learn by doing, then the appropriate curriculum supplies manipulation and exploration while adapting to the children's interests and ideas (Tegano, 1991).

Developmentally appropriate teaching strategies follow the curriculum plan. Though it is possible to drill young children until they can recite numbers in sequence, this is no indication of the understanding of number concepts and relationships. In order for children to internalize and remember what they have learned, the subject matter must be relevant to the their experience and development level. Teaching strategies include providing concrete, relevant activities for individuals or small informal groups. Activities occur in centers and learning stations that include art, music, books, math, puzzles, and dramatic play. Teachers serve as facilitators of the children's involvement with the materials by offering suggestions or adding different materials to the situation. The use of open-ended questions assists in the development of critical thinking skills of young learners (Tegano, 1991). Students are encouraged to use problem

solving skills rather than dependency on adults for solutions (Bredekamp, 1993). According to early childhood educator, David Elkind, teacher-controlled instruction undermines the intrinsic interest in learning and creates a student that lacks confidence in risk-taking and decision making. Therefore, teaching strategies in the developmentally appropriate classroom support child-initiated activities and self-directed problem solving (Elkind, 1986).

Literacy Development in the Preschool Environment

"Children's everyday activities are fertile ground for developing literacy," states Susan Britsch, Professor of literacy education at Purdue University (Britsch, 1993, p. 48). As children play in the developmentally appropriate classroom, literacy interactions occur naturally. "Just as children use Play-Doh and blocks to create and express their world, they also use print to make sense of their experiences," (Neuman & Roskos, 1990, p. 214). Children quickly learn to read words in a print-rich environment that have meaning to them. Labeling the environment using symbols and a variety of printed materials is an efficient way for children to interact with words in a relevant manner. It also provides the basis for early writing attempts during play activities (Soundy & Genisio, 1994). Literacy props

that can be used naturally by children encourage literacy-related interactions during play.

In a study of literacy learning through play, conducted by Susan B. Neuman and Kathy Roskos (1990), children reacted positively in an environment that included literacy props added to learning centers. For two weeks prior to the addition of literacy props, preschool children were observed and videotaped using a technique developed by Singer and Singer (Neuman & Roskos, 1997). Following the introduction of the literacy props, children were given unrestricted use of the new materials for exploration and no research-based observations occurred. Four weeks later, formal, videotaped observations were conducted. Using typological analysis, changes in literacy-related play were measured and compared with existing data (Scales, 1987) on play behavior (Neuman & Roskos, 1997). Analysis indicated thirty-seven literacy-play encounters following the placement of literacy props as compared to seven literacy encounters observed prior to the addition of literacy props. It was also noted that the children's literacy behaviors became more meaningful. Extended interactions with the props were measurable. Playing office in the dramatic role-play center occurred as part of the play sequence, as did list making, letter writing, and story telling . This study suggested the appropriate use of literacy props can have a

positive effect on emergent reading and writing skills of preschool students (Neuman & Roskos, 1997).

Literacy props can also be used to extend a theme (Bergeron, et al. 1996). During a field trip to a farm, teachers provide children with clipboards, paper, and pencil for drawing pictures of special interest areas. Upon return to the classroom, the drawings are used for language interactions among the children and teachers. Child-initiated extensions of the farm theme occur when it is disclosed that many of the students want to know more about farm machinery. Teachers support and encourage this behavior in the developmentally appropriate classroom by placing books on farming in the classroom environment. Toy tractors and farm animals are placed in the rice table and paper and markers are also available for the student that wants to recreate a farm scene. The dramatic role-play area would also include scales for measuring produce and a variety of paper and writing instruments for market lists and price tags (Goldhaber, et al. 1996). Props will change as themes change but the foundation for emergent literacy is in place. This encourages children to explore the usefulness of both written and oral language as they interact with the props and with each other (Rybcynski & Troy, 1995). With each theme, comes a different opportunity for the classroom teacher to support and nurture children's language and

literacy growth. Incorporating thematic units and literacy props into the preschool classroom provides meaningful experiences for young learners (Goldhaber, et al.1996). Rather than seeing the school environment as fragments of many things, children involved in thematic-projects that include literacy props, experience many levels of relevant learning and literacy (Bergeron, et al. 1996). Topics should extend from their interests and relate directly to their life experiences (Katz & Chard, 1989). For at-risk children, this is particularly meaningful. Literature supported themes provide the concrete experiences that are often unavailable to them (Neuman & Roskos, 1993).

Children benefit from additional literacy-related experiences if they are read to at home. Parents who read to their children on a regular basis provide additional opportunities for the emergent reader to develop a rich oral language and strong connection between written and spoken words (Clements & Warneck, 1994). However, when children are deprived of frequent home-based language experiences, it becomes a critical issue for the classroom teacher. Literacy based play allow children to "try on" language skills in a risk-free environment (Clements & Warncke). With these characteristics in place, the developmentally appropriate classroom

fosters an atmosphere of acceptance while addressing the natural desire of children to develop language and read (Bredekamp, 1993).

Family Involvement in the Preschool Classroom

The percentage of young children enrolled in school-based early childhood programs has tripled since the 1960's according to the U.S. General Accounting Office census information (1990).. With national attention focused on the policies of Goals 2000, and the increased availability of federal dollars for early intervention programs; numerous local school districts are enrolling four-year old children into developmental kindergarten classes (Coleman & Churchill, 1997). Many of these children are predetermined to be at-risk for school failure because of poverty and inadequate family support for the educational process (Swick & Graves, 1997). Family involvement efforts are included as part of the developmentally appropriate curriculum practices adopted by the National Association for the Education of Young Children. In the integrated components of appropriate practice, the NAEYC states, "Teachers work in partnership with parents, communicating regularly to build mutual understanding and greater consistency for children," (Brededkamp, 1993, p. 57). New theories on learning and development recognize the

environmental influences, including family inconsistencies, on school readiness factors. Readiness that includes physical, social, emotional, and cognitive development, has to become a shared responsibility between families of young children and early childhood educators (Kagan, 1992).

Quality early childhood programs can have long-term effects on at-risk children and their families (Bower, 1985). In a study developed through a grant by the Society for Research in Child Development, Arthur J. Reynolds (1996) and others, conducted research on the cognitive and family-support mediators on preschool effectiveness. Two major hypotheses evolved while conducting the research: the cognitive-advantage hypothesis and the family-support hypothesis. Both concepts are pivotal to the theory supporting early intervention for children living in poverty. The cognitive-advantage hypothesis was based on the premise that the positive effect of preschool on cognitive development sets up a cycle of successful academic achievement resulting in improved academic outcomes lasting into adolescence. The family-support hypothesis indicated longer-term effects of early intervention result due to the extent that the family's ability to function was improved. In addition, reviews of previous research supported the position of the positive effects of family involvement on early intervention

preschool programs (Reynolds, et al. 1996). Because the hypotheses were interdependent, researchers used an integrated approach of investigation.

The sample population consisted of economically disadvantaged children from the Chicago Public School District. The students were enrolled in low-income area schools receiving Title I funding and were predetermined to be at-risk due to economic and environmental factors. All children in the study attended a developmentally appropriate preschool program that included parental involvement in its philosophy. Using a stability coefficient of .60, ratings of parental involvement and family support were determined using teacher and parent responses to survey questions. Because latent–variable structural models are well suited to longitudinal studies, data analysis utilized these techniques. Results confirmed the positive long-term effects on cognitive development when family involvement becomes an integrated mediator (Reynolds, et al. 1996). For many children, the combined cooperation between home and school plays a key role in cognitive development and future academic success.

In an article for Child Development, Michael Coleman and Susan Churchill (1997), reported differences in the willingness of low-income families to become involved in their children's education. Home-based tutoring was not reported as problematic. However, their findings did

indicate low-income parents as hesitant in dealing directly with school officials citing reasons that included work demands, previous negative school-related experiences, and previous academic failures of their own (Coleman & Churchill, 1997). The research conducted by Reynolds and others, related similar attitudes and behaviors of the low-income families not participating in their confirmatory analysis on effective preschools and family involvement (Reynolds, et al. 1996). According to Marycarolyn France and Jane Hager (1993), advocates of school-based parental involvement of low-income families, what is needed is a curriculum model that is based on three tenets: recruitment, respect, and response (France, & Hager, 1993). As previously stated, many low-income parents have negative school attitudes based on prior school conflicts and their own past academic failures. They also report feeling unwelcome by middle class, educated school officials. However, findings from the Intergenerational Reading Project revealed that responding to the needs of low-income families, treating them with respect, and making education a shared responsibility, lessened negative attitudes regarding school involvement (Nickse, 1989). A positive side effect to changed attitudes involved areas of recruitment and retention of parent volunteers (France and Hager).

Quality preschools include philosophies that "provide families with the information and support they need to actively participate in school-related discussion regarding their children's education," (Coleman & Churchill, 1997, p. 145).

Transition to Kindergarten

For many children and their families, the transition from preschool to kindergarten is the first of many progressions within their school careers. The adjustment necessary for a smooth transition depends in part on the previous preschool experience, the knowledge base the child brings to the kindergarten classroom, and what the school expects from the child (Maxwell & Eller, 1994).

Research studies measuring adjustments to kindergarten have concluded that negative transitional behaviors were significantly reduced for children with prior preschool experiences. Children attending kindergarten without previous preschool attendance were found to have elevated stress-related behaviors including increased absence from school, various physical complaints to the school nurse, and negative attitudes about the school environment. In addition, successful adjustments such as separating from parents, bonding with adults outside of the family, and interacting with new

peer groups increased for children with previous preschool exposure (Ladd & Price, 1987).

Historically, kindergarten was the first opportunity for children to develop social as well as cognitive skills (Maxwell & Eller, 1994). However, children coming from developmentally appropriate preschools enter kindergarten with an extended physical, social, and cognitive knowledge base. These readiness skills must be fostered and protected throughout the transitional process (Maxwell & Eller, 1994). This requires open communication and cooperative planning between teachers, schools, and families (Ramey & Ramey, 1992). According to Sharon and Craig Ramey, early childhood specialists, "The transition-to-school process is developmental because what children need when they first prepare for and then enter school is not the same as what they need after they have adjusted to the school environment," (Ramey & Ramey, 1992, p. 196). Preplanning for the transitional period is essential if the move from preschool to kindergarten is positive and addresses the developmental needs of young children (Hains, et al. 1989).

When students enter environments that differ from previous experiences, they apply the rules and skills they already know. If a mismatch between what they know and what occurs, they are at risk for

failure (Gelfer, & McCarthy, 1994). This is also true for the families. New routines, rules, and procedures have to be integrated into the school-family connection. If the transitional process is poorly planned, the challenges become obstacles that burden the children and their families with feelings of inadequacy and possible failure. This is particularly true for early learners who have been identified as at-risk students (Levin, 1988). Schools that acknowledge and address these issues use the transitional opportunity to support and nurture young children and their families as they take the first step on the academic ladder (Gelfer & McCarthy. 1994).

Early childhood professionals agree that a planning model is necessary when developing and implementing a successful transition for children and families (Kagan, 1994). One such model, developed at the University of Nevada by early childhood educators, Jeffrey Gelfer and Jane McCarthy includes five components identified as necessary for successful transition from preschool to kindergarten (Gelfer & McCarthy, 1994). The five-step plan includes: (1) developing a planning team that involves teachers, parents, administrators, and specialists from preschool and kindergarten, (2) generating goals and identifying challenges that outline a successful transitional process, (3) developing written transition plans that include procedures, activities, timelines, and responsibilities, (4) acquiring

support and commitment from teachers and others involved in the transitional process, and (5) evaluating the effectiveness of the transitional process. It is essential that families of young children be included in each phase of the transition process. Collaborative partnerships between schools and families increase the likelihood of positive school experiences for early learners, and provide a successful transitional process that promotes future academic success (Gelfer, 1991).

Conclusion

According to Gary Salyers, author of The Critical Preschool Years, "The extension of high-quality early childhood programs throughout the country offers more potential for educational advancement than all the reform reports put together," (Salyers, 1991, p. 141). As school districts strive to meet the needs of disadvantaged young children and their families, developmentally appropriate classrooms offer a definitive solution to children entering schools minus the skills necessary for academic success. Young children possess an innate appetite for learning, exploring, and absorbing information in their surroundings (Salyers). Quality preschools and well-trained teachers do help children achieve in school by using their natural curiosity as a springboard for physical, social, and cognitive growth. The considerable evidence that developmental preschool experiences benefit

children from low-income families is well documented (Galinsky, 1991). As federal and state policymakers continue to pressure local school districts to better prepare students in academic readiness and success, early intervention will remain the key for addressing these needs. The commitment to quality preschool intervention is founded on the belief that it is in society's best interest to have educated citizens (Pratt, 1997).

Chapter Three

METHODOLOGY

Introduction

The purpose of this study is to determine if at-risk children from low-income families who participate in a developmentally appropriate preschool program enter kindergarten with enhanced readiness skills that result in improved academic achievement. Because at-risk children often lack the social and cognitive skills necessary to enter school ready to learn, the significance of this study was to determine if a quality preschool program is able to improve school readiness and increase academic achievement. By providing a developmentally appropriate curriculum, two effects are evident: (1) the student will enter kindergarten with strengthened readiness skills and attitudes and (2) the student will attain successful academic achievement. By participating in a quality preschool program, students will begin a successful educational foundation from which future learning and achievement can occur.

Research Questions

1. Will there be significant difference in kindergarten readiness skills by students having prior preschool experience when compared with students that did not attend preschool?

2. Will there be significant difference in kindergarten achievement by students having prior preschool experience when compared with students that did not attend preschool?

Nature of the Experiment

Population and Sample

Prior to this study, a meeting was held with the school principal and early childhood staff to discuss the purpose of the project. Verbal approval was granted.

The subjects for the study included twenty (20) four and five-year old students enrolled in the Title I developmental preschool program during the 1997-98 school year and twenty (20) four and five year old children within the same school district who did not attend the program. The study also included twenty (20) five and six year old kindergarten children who attended the Title I developmental preschool and twenty kindergarten children who did not attend the preschool program during the 1996-1997 school year. All students reside within the Montcalm Elementary School District, located in Rock, West Virginia. Additionally, no pretest is required

for entrance into the developmental preschool program and there is no other federally funded early childhood program within the Montcalm Elementary school district. The Mercer County Board of Education policy on age requirements mandates children must be four years old on or before September 1 of the current school calendar year. A certified birth certificate, valid immunization record, and social security card is also required.

Montcalm Elementary School qualifies for Title I funding administered through the Mercer County Board of Education. All students attending Montcalm Elementary School have access to Title I services.

Method

A stratified random sample of eighty children from the Montcalm Elementary School District were chosen to participate in this program. Forty of the children were chosen for two experimental groups and forty were chosen for two control groups.

Prior to the start of the project, test batteries were selected and permission was granted from the school principal for administering such examinations.

Data Collection

Using the Slosson Kindergarten Readiness Test, all sub-tests were administerd to students enrolled in the Title I preschool at Montcalm

Elementary during the months of March and April 1998. During the final week of March 1998, the Metropolitan Readiness Test was administered to all kindergarten students. The Slosson Kindergarten Readiness Test was administered to the children not having attended the preschool program during kindergarten registration, May 13, 1998. Comparison of the Slosson Kindergarten Readiness scores was done between the experimental group (those enrolled in the preschool program) and the control group. A second comparison of the Metropolitan Readiness Test data was done between the experimental group (those having attended the preschool program) and the control group.

Design

A t-test of gain scores was utilized to test the following research questions:

1. Will there be significant difference in kindergarten readiness skills by students having prior preschool experience when compared with students that did not attend preschool?
2. Will there be significant difference in kindergarten achievement by students having prior preschool experience when compared with students that did not attend preschool?

Summary

This chapter is designed to represent the research methodology and procedures used to determine the effectiveness of a developmentally appropriate preschool as advocated by the National Association for the Education of Young Children on kindergarten readiness and achievement.

The study consists of forty preschool-aged children and forty kindergarten-aged children from the Montcalm Elementary School District, located in Mercer County, West Virginia. The children in both experimental groups participated in the Title I preschool program servicing at-risk students from low-income families.

Tests used for comparison studies between the experimental and control groups include the Kindergarten Readiness Test, Slosson Educational Publications, Inc. and the Metropolitan Readiness Test, Sixth Edition, Metropolitan Early Childhood Assessment Program. A t-test of gain scores was used to test the hypotheses.

Chapter Four

RESULTS

Sample

The population of this study consisted of two experimental groups and two control groups of students living in the Montcalm Elementary School district. One experimental group included twenty (20) four and five-year old children enrolled in the Title I developmental preschool program during the 1997-1998 academic school year. The control group consisted of twenty (20) four and five-year old children from the same school district who did not attend the preschool program during the 1997-1998 academic school year (see Table 1).

Table 1

Sample Population

Group Category	Number in Group	Grade Level of Group
Experimental Group 1 (Age 4-5)	20	Preschool
Control Group (Age 4-5)	20	Not Enrolled

The second experimental group in the study included twenty (20) five and six-year old kindergarten children who had attended the Title I developmental preschool program in the 1996-1997 academic school year.

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The control group consisted of twenty (20) five and six-year old kindergarten children who had no prior preschool experience (see Table 2).

Table 2

Sample Population

Group Category	Number in Group	Grade Level of Group
Experimental Group 2 (Age 5-6) Preschool	20	Kindergarten
Control Group (Age 5-6) No Preschool	20	Kindergarten

The Montcalm Elementary School district qualifies as a school-wide Title I service area due to low economic factors for at-risk children as established by the federal government. For example, during the 1997-1998 school year, 85% of students attending Montcalm Elementary School qualified for free or reduced breakfast and lunch programs. Any student attending a school-wide Title I service area is eligible for programs provided by Title I funding, including the developmental preschool program if the age criterion is met. No pre-tests for admittance are administered.

Results

During the months of March, April, and May 1998, all preschool-aged children participating in the experimental and control groups were tested using the Slosson Kindergarten Readiness Test. Students enrolled in kindergarten and participating in the experimental and control groups were tested in March, 1998 using all sub-tests of the Metropolitan Early

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Childhood Assessment Program, sixth edition. The test scores from the experimental groups and the control groups were then compared at both developmental grade levels.

Hypothesis

H_0: No significant differences will be identified when comparing children who attended preschool to children who did not attend preschool.

H_1: Children who attended preschool will score higher in kindergarten readiness and achievement than children who did not attend preschool.

The mean and standard deviation data for experimental group 1 are reported in Table 3 below.

Table 3

Treatment	Criterion	X	SD
Experimental 1 (Age 4-5 years)	Readiness	44.9	4.204
Control (Age 4-5 years)	Readiness	28.05	8.319

The average mean score for experimental group one, which consisted of four and five year old preschoolers, in kindergarten readiness is 44.9 with a standard deviation of 4.204. The average score for control group two, which included children without prior preschool attendance, in kindergarten readiness is 28.05 with a standard deviation of 8.310.

The mean and standard deviation data for the second experimental

group is reported in Table 4 below.

Table 4

Treatment	Criterion	X	SD
Experimental 2 (Age 5-6 years)	Beginning Reading Sub-test	32.7	3.6
Experimental 2 (Age 5-6 years)	Story Comprehension Sub-test	23.05	1.82
Experimental 2 (Age 5-6 years)	Quantitative Sub-test	24.05	2.544
Treatment	**Criterion**	**X**	**SD**
Experimental 2 (Age 5-6 years)	Pre-Reading Sub-test	55.85	4.671
Control (Age 5-6 years)	Readiness Sub-test	28.05	8.319
Control (Age 5-6 years)	Beginning Reading Sub-test	21.55	5.987
Control (Age 5-6 years)	Story Comprehension Sub-test	21.55	3.531
Control (Age 5-6 years)	Quantitative Sub-test	20.4	4.684
Control (Age 5-6 years)	Pre-Reading Sub-test	42.7	8.951

The average mean score for experimental group three, consisting of five and six year old children with a preschool background, in beginning reading achievement is 32.7 with a standard deviation of 3.6. The average mean score for control group four, which included children without prior preschool experience, in pre-reading achievement is 21.55 with a standard deviation of 5.987.

The average mean score for experimental group three in story comprehension achievement is 23.05 with a standard deviation of 1.82. The

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average mean score for control group four in story comprehension achievement is 21.55 with a standard deviation of 3.531.

The average mean score for experimental group three in quantitative skill achievement is 24.05 with a standard deviation of 2.544. The average mean score for experimental group four in quantitative skill achievement is 20.4 with a standard deviation of 4.684.

The average mean score for experimental group three in pre-reading achievement is 55.85 with a standard deviation of 4.671. The average mean score for control group four in pre-reading achievement is 42.7 with a standard deviation of 8.951.

As no pre-test was administered, the experimental group scores are compared to the control group scores for all students participating in the study and residing within the Montcalm Elementary School district. A t-test was conducted to test the hypotheses involving the experimental and control groups.

Test scores were compared between the experimental and control groups for kindergarten readiness using the Slosson Kindergarten Readiness Test. Results follow in Table 5.

Table 5

t-test

Treatment	Criterion	T	P

Experimental Vs. Control	Slosson Kindergarten Readiness	15.509	.0001

Results of Table Five

Results of the paired t-test used in testing for significance revealed a t value of 15.509 with p = .0001 which is statistically significant. Therefore, the null hypothesis is rejected that states no differences will be identified when comparing children who attended preschool and those children who did not attend preschool. Therefore, the alternate hypothesis that states children who attend preschool will score higher in kindergarten readiness than children who did not attend preschool is accepted. This is an indication that at-risk children enter kindergarten with increased readiness skills when they participate in a developmentally appropriate preschool intervention program.

Using all sub-tests of the Metropolitan Assessment Package, resulting test scores were compared between the five and six year old students participating in the experimental and control groups for kindergarten achievement in four areas: beginning reading, comprehension, quantitative skills, and pre-reading. Results follow in Table 6.

Table 6

t-test

Treatment	Criterion	X	SD
Experimental Vs. Control	Reading	13.57	.0001
Experimental Vs. Control	Comprehension	3.627	.0018
Experimental Vs. Control	Quantitative	7.026	.0001
Experimental Vs. Control	Pre-Reading	11.718	.0001

Results of Table Six

A paired t-test was performed to test for significance in four sub-test categories. The first t-test performed measured beginning reading achievement and revealed a t value of 13.57 with p = .0001 which is statistically significant. Therefore, the null hypothesis that states no significant differences will be identified when comparing children who attended preschool to children who did not attend preschool is rejected and the alternate hypothesis that states children who attended preschool will score higher in kindergarten readiness and achievement is accepted.

A second paired t-test was also performed to test for significance in reading comprehension achievement. Results indicate a t value of 3.627 with p = .0018 which is statistically significant. Again, the null hypothesis that states no significant differences will be identified when comparing children

who attended preschool to children who did not attend preschool is rejected and the alternate hypothesis that states children who attended preschool will score higher in kindergarten readiness and achievement is accepted.

In the third category testing for quantitative skill achievement, a paired t-test was performed to test for statistical significance. The t-test revealed a t value of 7.026 with p = .0001 which is significant. As previously stated, the hull hypothesis that states no significant difference will be identified when comparing children who attended preschool to children who did not attend is rejected and the alternate hypothesis that states children who attend preschool score higher in kindergarten readiness and achievement is accepted.

The fourth paired t-test was performed to test for significance in pre-reading achievement and revealed a t value of 11.718 with p = .0001 is significant. Therefore, the null hypothesis that states no differences will be identified when comparing scores measuring readiness and achievement in children who attended preschool with children who did not attend preschool is rejected. The alternate hypothesis that states children who attend preschool score higher in kindergarten readiness and achievement when compared with children who did not attend preschool is accepted.

The results of the data support the relevance of this study. Developmentally appropriate preschool programs appear to support the theory of using early intervention techniques as a means to reduce the academic gap of at-risk children.

Chapter Five

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study involved forty (40) preschool aged children residing within the Montcalm Elementary School district located in Mercer County, West Virginia. The study also involved forty (40) kindergarten aged children enrolled at Montcalm Elementary School. The experimental group from both developmental grade levels consisted of students who had attended the Title I developmental preschool located at Montcalm Elementary. The control groups from both developmental grade levels had not attended any preschool program. Because Montcalm Elementary School qualifies as a school-wide Title I school, all students have access to current Title I programs including the developmental preschool.

The purpose of this study was to determine the impact of a developmentally appropriate preschool curriculum on at-risk students in areas of kindergarten readiness and kindergarten achievement. This study revealed significant differences in readiness and achievement for students attending the developmental preschool program when compared with students from the same school district who did not participate in the Title I preschool program.

Conclusions

The intent of this study was to determine the effect of a developmentally appropriate preschool curriculum in areas of kindergarten readiness and kindergarten achievement for children determined to be at-risk due to social and economic factors. From the results of this study, it can be concluded that early intervention techniques found in the developmentally appropriate preschool classroom do result in improved readiness skills and academic achievement.

Recommendations

Future research in this area may include a comparison of students with private or public funded preschool experience in school districts not qualifying for Title I services. The question of whether developmental preschool programs can be beneficial to all students in areas of readiness and achievement would provide essential information to school boards as they consider the inclusion of four year old children into all public school districts. As educators search for solutions that result in improved test scores in all academic domains, early intervention programs may be one answer.

Though the sample was adequate for the purpose of this study, a larger sample might be beneficial and may produce additional information.

A longitudinal study of a particular group may determine long-term effects of a quality preschool program on achievement in other grade levels. In addition, it may be beneficial to determine the impact on the school drop out rate and potential job placement value when early intervention programs address the needs of at-risk children.

Additional research is important in the area of early intervention as it provides educators with critical data as they attempt to meet the demands of a rapidly changing society. Productive citizens depend on the educational foundation from which they emerge and society depends on productive citizens. With the knowledge about how, why, and when young children develop positive school attitudes and work ethics, school administrators can plan developmental programs for young students that promote personal, social, and academic success as they progress through the public school system.

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